

Docket No. F-7987

Ser. No. 10/673,780

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) A motor with an aerodynamic bearing comprising:
 - a base;
 - a shaft ~~fixed such that the shaft projects upward from a part projecting~~ upwardly from said base at a point adjacent a central portion of the said base;
 - a sleeve ~~arranged at~~ on an outer circumferential part of the said shaft ~~via~~ a gas space;
 - a gas-containing volume between said sleeve and said outer circumferential part of said shaft, defining an aerodynamic bearing;
 - a rotor ~~provided at an~~ on said outer circumferential part of the said sleeve, ~~arranging;~~
 - a hub disposed against an upper portion of said rotor;
 - a plurality of permanent magnets on said rotor; and
 - a coil ~~provided at the~~ on said base ~~such that the coil locates around~~ and surrounding an outer circumferential part of the said rotor.

2. (Currently Amended) A motor with an aerodynamic bearing comprising:

Docket No. F-7987

Ser. No. 10/673,780

a base;

~~a shaft fixed such that the shaft projects upward from a part~~ projecting upwardly from said base at a point adjacent a central portion of the said base;

a sleeve ~~arranged at on~~ on an outer circumferential part of the said shaft ~~via a gas space;~~

a coil ~~disposed provided at the on said~~ base such that the coil locates around, said coil surrounding an outer circumferential part of the said sleeve, said coil being disposed axially collinear with said sleeve;

a rotor ~~provided at an on an~~ on an outer circumferential part of the said coil; arranging ;

a plurality of permanent magnets on said rotor; and

a hub ~~supports the supporting said sleeve and the said rotor, said hub and covers~~ covering an upper portion of the shaft such that the coil locates around an outer circumferential part of the said rotor.

3. (Currently Amended) A motor with an aerodynamic bearing comprising:

a base;

~~a sleeve fixed such that the sleeve projects upward from a part~~ projecting upwardly from said base at a point adjacent a central portion of the said base;

Docket No. F-7987

Ser. No. 10/673,780

a shaft ~~arranged into the~~ positioned in said sleeve ~~via~~ ;

a gas space volume, between said shaft and said sleeve, defining an
aerodynamic bearing;

a rotor ~~provided at~~ on an outer circumferential part of the said sleeve,
~~arranging~~ ;

a plurality of permanent magnets on said rotor; and

a coil ~~provided at~~ on the base ~~such that the coil locates around and~~
surrounding an outer circumferential part of ~~the~~ said rotor.

4. (Currently Amended) ★ The motor with an aerodynamic bearing according to claim 1, further comprising:

a hub ~~supports the~~ supporting said sleeve and ~~the~~ said rotor and ~~covers~~
covering an upper portion of ~~the~~ said shaft; and

a back yoke attached to the said hub, such that the said back yoke ~~locates~~
is positioned around an outer circumferential part of ~~the~~ said coil.

5. (Currently Amended) ★ The motor with an aerodynamic bearing according to claim ~~[[1]]~~ 4, further comprising:

a color wheel attached to one of ~~the~~ said hub and said back yoke,
projecting outward along ~~the~~ a direction of ~~the~~ said shaft core and a right angle

Docket No. F-7987

Ser. No. 10/673,780

~~of the~~ to said shaft; and

wherein:

the said coil which is a coreless waveform continuation coil;

~~a~~ said back yoke ~~provided such that the back yoke locates~~ is located
around an outer circumferential part of ~~the coreless waveform continuation~~ said
coil; and

a said hub supports ~~the~~ said sleeve, said rotor and said back yoke ~~and~~
~~covers an upper portion of the shaft; and~~

~~a color wheel attached to one of the hub and back yoke, projecting~~
~~outward along the direction of the shaft core and right angle of the shaft.~~

6. (New) A motor with an aerodynamic bearing comprising:

a base;

a shaft projecting upwardly from said base at a point adjacent a central
portion of said base;

a sleeve on an outer circumferential part of said shaft;

a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;

a rotor surrounding an outer circumferential part of said sleeve;

Docket No. F-7987

Ser. No. 10/673,780

at least one permanent magnet on said rotor;
a coil on said base and surrounding an outer circumferential part of said rotor;
a back yoke attached to a circumferential part of said coil;
a hub, supporting said back yoke, said sleeve, and said rotor, and covering an upper part of said shaft;
a color wheel attached to said back yoke;
a holder projecting outwardly along a direction of a core of said shaft and a right angle to said shaft;
a first magnet attached to a concavity of an upper part of said hub; and
a second magnet attached to an upper portion of said shaft, which acts as a brake for said first magnet.

7. (New) The motor with an aerodynamic bearing according to claim 6, wherein said coil is a coreless waveform continuation coil.

8. (New) The motor with an aerodynamic bearing according to claim 6, wherein said first and second magnets are thrust magnets.

9. (New) The motor with an aerodynamic bearing according to claim 6, wherein

Docket No. F-7987

Ser. No. 10/673,780

said at least one permanent magnet on said rotor surrounding said outer circumferential part of said sleeve and at said outer circumferential part of said shaft, said gas-containing volume, and said coil are positioned in such a way relative to one another so as to dissipate excess generated torque and prevent damage to said shaft and said sleeve.

10. (New) A motor with an aerodynamic bearing comprising:

- a base;

- a shaft projecting upwardly from said base at a point adjacent a central portion of said base;

- a sleeve on an outer circumferential part of said shaft;

- a gas-containing volume between said sleeve and said outer circumferential part of said shaft, defining an aerodynamic bearing;

- a rotor surrounding an outer circumferential part of said sleeve;

- at least one permanent magnet on said rotor;

- a coil on said base and surrounding an outer circumferential part of said rotor;

- a back yoke attached to a circumferential part of said coil;

- a hub, supporting said back yoke, said sleeve, and said rotor, and covering an outer circumferential part of said back yoke;

Docket No. F-7987

Ser. No. 10/673,780

a color wheel attached to an outer circumferential part of said sleeve;
a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;
a first magnet attached to a concavity of an upper part of said hub; and
a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.

11. (New) A motor with an aerodynamic bearing comprising:

a base;
a shaft projecting upwardly from said base at a point adjacent a central
portion of said base;
a sleeve on an outer circumferential part of said shaft;
a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;
a rotor surrounding an outer circumferential part of said sleeve;
at least one permanent magnet on said rotor;
a coil on said base and surrounding an outer circumferential part of said
rotor;
a back yoke attached to an outer circumferential part of said coil;
a hub, supporting said back yoke, said sleeve, and said rotor, and

Docket No. F-7987

Ser. No. 10/673,780

covering an outer circumferential part of said back yoke;

a color wheel attached to an outer circumferential part of said sleeve;

a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;

a first magnet attached to a concavity of an upper part of said hub; and

a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.

12. (New) A motor with an aerodynamic bearing comprising:

a base;

a shaft projecting upwardly from said base at a point adjacent a central
portion of said base;

a sleeve on an outer circumferential part of said shaft;

a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;

a rotor surrounding an outer circumferential part of said sleeve;

at least one permanent magnet on said rotor;

a coil on said base and surrounding an outer circumferential part of said
rotor;

a back yoke attached to said base;

Docket No. F-7987

Ser. No. 10/673,780

a hub, supporting said back yoke, said sleeve, and said rotor, and covering an outer circumferential part of said back yoke;

a color wheel attached to an outer circumferential part of said sleeve;

a holder projecting outwardly along a direction of a core of said shaft and a right angle to said shaft;

a first magnet attached to a concavity of an upper part of said hub; and

a second magnet attached to an upper portion of said shaft, which acts as a brake for said first magnet.

13. (New) A motor with an aerodynamic bearing comprising:

a base;

a shaft projecting upwardly from said base at a point adjacent a central portion of said base;

a sleeve on an outer circumferential part of said shaft;

a gas-containing volume between said sleeve and said outer circumferential part of said shaft, defining an aerodynamic bearing;

a rotor surrounding an outer circumferential part of said sleeve;

at least one permanent magnet on said rotor;

a coil on said base and surrounding an outer circumferential part of said rotor;

Docket No. F-7987

Ser. No. 10/673,780

a back yoke attached to an outer circumferential part of said coil;
a hub, supporting said back yoke, said sleeve, and said rotor, and
covering an outer circumferential part of said back yoke;
a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;
a first magnet attached to a concavity of an upper part of said hub; and
a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.

14. (New) A motor with an aerodynamic bearing comprising:

a base;
a shaft projecting upwardly from said base at a point adjacent a central
portion of said base;
a sleeve on an outer circumferential part of said shaft;
a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;
a rotor surrounding an outer circumferential part of said sleeve;
at least one permanent magnet on said rotor;
a coil on said base and surrounding an outer circumferential part of said
rotor;

Docket No. F-7987

Ser. No. 10/673,780

a back yoke attached to an outer circumferential part of said coil;
a hub, supporting said back yoke, said sleeve, and said rotor, and
covering an outer circumferential part of said coil;
a color wheel attached to an outer circumferential part of said sleeve;
a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;
a first magnet attached to a concavity of an upper part of said hub; and
a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.

15. (New) A motor with an aerodynamic bearing comprising:

a base;
a shaft projecting upwardly from said base at a point adjacent a central
portion of said base;
a sleeve on an outer circumferential part of said shaft;
a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;
a coil on said base;
a rotor surrounding an outer circumferential part of said coil;

Docket No. F-7987

Ser. No. 10/673,780

at least one permanent magnet on said rotor;
a back yoke attached to an outer circumferential part of said sleeve;
a hub, supporting said back yoke, said sleeve, and said rotor, and
covering an outer circumferential part of said back yoke;
a color wheel attached to an outer circumferential part of said sleeve;
a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;
a first magnet attached to a concavity of an upper part of said hub; and
a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.

16. (New) A motor with an aerodynamic bearing comprising:

a base;
a sleeve attached to and projecting upward from said base;
a shaft projecting into said sleeve;
a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;
a rotor surrounding an outer circumferential part of said sleeve;
at least one permanent magnet on said rotor;
a coil on said base and surrounding an outer circumferential part of said

Docket No. F-7987

Ser. No. 10/673,780

rotor;

a back yoke attached to a circumferential part of said coil;

a hub, supporting said back shaft, said rotor and said back yoke, and
covering an outer circumferential part of said sleeve;

a color wheel attached to an outer circumferential part of said sleeve;

a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;

a first magnet attached to a concavity of an upper part of said hub; and

a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.

17. (New) A motor with an aerodynamic bearing comprising:

a base;

a sleeve attached to and projecting upward from said base;

a shaft projecting into said sleeve;

a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;

a coil on said base;

a rotor surrounding an outer circumferential part of said coil;

at least one permanent magnet on said rotor;

Docket No. F-7987

Ser. No. 10/673,780

a back yoke attached to an outer circumferential part of said sleeve;
a hub, supporting said back shaft, said rotor and said back yoke, and
covering an outer circumferential part of said sleeve;
a color wheel attached to an outer circumferential part of said sleeve;
a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;
a first magnet attached to a concavity of an upper part of said hub; and
a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.

18. (New) A motor with an aerodynamic bearing comprising:

a base;
a shaft projecting upwardly from said base at a point adjacent a central
portion of said base;
a sleeve on an outer circumferential part of said shaft;
a gas-containing volume between said sleeve and said outer
circumferential part of said shaft, defining an aerodynamic bearing;
a rotor surrounding an outer circumferential part of said sleeve;
at least one permanent magnet on said rotor;
a coil on said base and surrounding an outer circumferential part of said

Docket No. F-7987

Ser. No. 10/673,780

rotor;

a thrust washer at a lower end portion of said sleeve;

a color wheel attached to an outer circumferential part of said sleeve;

a holder projecting outwardly along a direction of a core of said shaft
and a right angle to said shaft;

a first magnet attached to a concavity of an upper part of said hub; and

a second magnet attached to an upper portion of said shaft, which acts as
a brake for said first magnet.